CLAIMS

1. Stabilizer (1) designed to be slid onto a rod (2), characterized in that it comprises at least one elastic part (4) that can deform when the stabilizer (1) is held in an initial position in compression against a shoulder (5) of the rod (2), this elastic part (4) compensating for play that may appear later between the stabilizer (1) and the rod (2).

2. Stabilizer according to claim 1, characterized in that the play is longitudinal.

3. Stabilizer according to either claim 1 or 2, characterized in that the elastic part (4) co-operates with the shoulder (5) to block the stabilizer (1) in rotation with respect to the rod (2) in the initial position, this blockage in rotation being kept later.

4. Stabilizer according to any one of claims 1 to 3, characterized in that the elastic part (4) is located at one end of the stabilizer and it will come into contact with the shoulder (5) of the rod (2).

5. Stabilizer according to one of claims 1 to 4, characterized in that it also comprises a part more rigid than the elastic part (4), this part also being practically non deformable.

6. Stabilizer according to one of claims 1 to 5, characterized in that it is in the shape of a sleeve, the elastic part (4) being a deformable tubular portion of the sleeve, this tubular portion being reversibly deformable.

7. Stabilizer according to claim 6, characterized in that the deformable tubular portion (4) comprises a series of projecting parts (41) around its periphery, and oriented longitudinally and separated by recessed parts (42).

8. Stabilizer according to claim 7, characterized in that the projecting parts (41) will cooperate with the projecting parts (51) of the shoulder (5), the projecting parts (41) of the deformable tubular portion (4) being provided with sides (43) that maintain sliding and separating contact with the sides (53) of the projecting parts (51) of the shoulder (5) during initial positioning.

9. Stabilizer according to one of claims 7 or 9, characterized in that the sides (43) of the projecting parts (41) of the deformable tubular section (41) essentially have a spiral-shaped profile.

10. Stabilizer according to one of claims 7 to 9, characterized in that a cross-section shows two sides (43) of a part (41) projecting from the deformable tubular portion (4) delimiting an angle at the vertex (χ) that is greater than or equal to the angle at the vertex (δ) delimited by two radii (R) of the tubular portion passing approximately at the mid-thickness (e) of the two sides (43).

11. Stabilizer according to any one of claims 7 to 10, characterized in that the projecting parts (41) of the deformable tubular portion (4) are flared on their end and have longitudinal symmetry.

12. Rod (2) that will be fitted with at least one stabilizer (4) according to one of claims 1 to 11, characterized in that it comprises a shoulder (5) that will cooperate with the stabilizer.

13. Rod according to claim 12, characterized in that the geometry of the shoulder (5) matches the geometry of the elastic part (4).

14. Rod according to one of claims 11 to 13, designed to hold external means (61) that help to keep the stabilizer (1) in compression, characterized in that it comprises means (60) contributing to holding the stabilizer (1) in compression against the shoulder (5), these means (60) being designed to cooperate with the external means (61).

15. Rod according to claim 14, characterized in that the means contributing to holding the stabilizer (1) in compression against the shoulder (5) comprise at least one zone (60) with a male thread.

16. Rod according to claim 14, characterized in that the means contributing to keeping the stabilizer (1) in compression in contact with the shoulder (5) comprise at least one housing (63) in which a part (64) will be fitted, one end of which is provided with a male thread.

17. Rod according to one of claims 12 to 16, characterized in that the shoulder (5) is sufficiently rigid to be practically non deformable.

18. Rod according to one of claims 12 to 17, characterized in that it is a rod in a string of drilling rods.

19. Rod according to claim 18, characterized in that it is a drill stem.

20. Rod according to one of claims 12 to 19, characterized in that it is a logging while drilling tool.

21. Rod according to one of claims 11 to 20, characterized in that it is a measurement while drilling tool.

22. Assembly formed from at least one rod (2) according to one of claims 12 to 21, the rod (2) carrying at least one stabilizer (1) according to one of claims 1 to 11, characterized in that it also comprises external means (61) contributing to holding the stabilizer (1) in compression with the shoulder (5) of rod (2).

23. Assembly according to claim 22, characterized in that the external means (61) are in the shape of a ring threaded on the inside to be screwed on the rod (2).

24. Assembly according to one of claims 22 or 23, characterized in that a first space (J) is formed between the end of the projecting parts (41) of the deformable tubular part (4) and the shoulder (5) when the stabilizer is in position in contact with the shoulder (5) without compression, a second space (J1) is formed between the end of the projecting part (41) of the deformable tubular part (4) and the shoulder (5) when the stabilizer (1) is in the initial position, the second space (J1) being less than the first space (J).